IN THE CLAIMS:

1. (Original) A fuel cartridge for use with a direct oxidation fuel cell, comprising;

(A) an exterior housing containing a fuel solution, said housing having an exit port through which fuel is transported out of the cartridge; and

(B) a fuel delivery component, comprised substantially of a material, which fuel delivery component, is substantially saturated with fuel for delivery to said fuel cell as fuel is consumed by said fuel cell, said fuel delivery component having a contact point extending through said exit port in said housing.

2. (Original) The fuel cartridge as defined in claim 1 wherein said fuel delivery component is substantially comprised of a foam-based material.

3. (Original) The fuel cartridge as defined in claim 1 wherein said fuel delivery component is substantially comprised of an expanded polymer.

4. (Original) The fuel cartridge as defined in claim 1 wherein said fuel delivery component is substantially comprised of a felted metal material.

5. (Original) The fuel cartridge as defined in claim 1 further comprising a second port through which said cartridge may be refilled.

6. (Original) The fuel cartridge as defined in claim 1 including means for interrupting the flow of fuel from said fuel delivery component.

7. (Currently Amended) The fuel cartridge as defined in [[claim 4]] claim 6 wherein said means for interrupting the flow of fuel is comprised substantially of [[Kap-

ton]] tape substantially covering said contact point [[on said]], and wherein said fuel delivery component is comprised substantially of a hydrophilic foam component.

8. (Currently Amended) A direct oxidation fuel cell having an associated fuel source containing a fuel solution, comprising:

(A) an outer container;

(B) a membrane electrode assembly disposed within said outer container, including:

(i) a protonically conductive, electronically non-conductive membrane electrolyte, having an anode face and an opposing cathode face, an anode chamber being defined between said anode face and an interior wall of said container and a cathode chamber being defined between said cathode face and an interior wall of said container; and

(ii) a catalyst coating disposed on at least one of said anode face and said cathode face, whereby electricity-generating reactions occur upon introduction of fuel solution from the associated fuel source, including anodic dissociation of said fuel solution into carbon dioxide, protons and electrons, and cathodic combination of protons, electrons and oxygen from an associated source of oxygen, producing water;

(C) an anodic fuel receptor material disposed in said anode chamber in intimate contact with [[said]] an anodic diffusion layer, said anodic fuel receptor material allowing fuel solution to be drawn from said associated fuel source in such a manner that said fuel solution is drawn into said anode chamber as fuel is consumed at said anode; and

(D) means for collecting electric current provided in said electricity-generating reactions to provide said electric current to an external load.

9. (Currently Amended) The direct oxidation fuel cell as defined in claim 8 wherein said anodic fuel receptor material is comprised substantially of a conductive ma-

terial to which a process or second material has been applied to create an electronically conductive, porous, high capillarity material.

10. (Currently Amended) The direct oxidation fuel cell as defined in claim 8 wherein said anodic fuel receptor material is comprised substantially of foam materials.

11. (Currently Amended) The direct oxidation fuel cell as defined in claim 8 wherein said anodic fuel receptor material is comprised substantially of a felted metal material.

12. (Cancelled)

13. (Currently Amended) The direct oxidation fuel cell as defined in [[claim 12]] claim 8 further comprising a wire mesh disposed between said anodic diffusion layer and said anodic fuel receptor material to facilitate conducting electrons produced in said anodic reaction to the external load.

14. (Original) The direct oxidation fuel cell as defined in claim 8 further comprising a cathodic foam component comprised substantially of a hydrophilic material which draws water away from said cathode face of said membrane.

15. (Currently Amended) The direct oxidation fuel cell as defined in [[claim 8]] claim 14 further comprising a wire mesh disposed between said cathodic diffusion layer and said cathodic foam component to facilitate conducting electrons.

16. (Original) The direct oxidation fuel cell as defined in claim 8 further comprising a vent disposed in said anode chamber to allow carbon dioxide to flow out of said anode chamber.

17. (Original) The direct oxidation fuel cell as defined in claim 16 wherein said vent is comprised substantially of a material that resists oxygen from entering said anode chamber.

18. (Currently Amended) The direct oxidation fuel cell as defined in claim 17 wherein said vent is comprised substantially of [[Teflon AF]] a polytetrafluoroethylene material.

19. (Currently Amended) A direct oxidation fuel cell system comprising:

(A) a direct oxidation fuel cell including:

(i) a membrane electrode assembly, including:

a.) a protonically conductive, electronically non-conductive membrane electrolyte, having an anode face and an opposing cathode face; and

b.) a catalyst coating disposed on at least one of said anode face and said cathode face, whereby electricity-generating reactions occur upon introduction of fuel solution from an associated fuel source, including anodic dissociation of said fuel solution into carbon dioxide, protons and electrons, and cathodic combination of protons, electrons and oxygen from an associated source of oxygen, producing water;

(ii) an anodic fuel receptor material disposed in said anode chamber in intimate contact with [[said]] an anodic diffusion layer, said anodic fuel receptor material allowing said fuel solution to be drawn from said associated fuel source in such a manner that said fuel solution travels through to said anode face as fuel is consumed at said anode;

(iii) means for collecting electric current provided in said electricity-generating reactions to provide said electric current to a load; and

[[(B) a fuel source; and]]

[[(C)]](B) a fuel container and delivery assembly adapted to be coupled to an associated fuel source when said fuel container is to be filled with fuel and said fuel container and delivery assembly adapted to be coupled [[between said fuel source and]] to said direct oxidation fuel cell, when fuel is being delivered to said fuel cell.

20. (Original) The direct oxidation fuel cell system as defined in claim 19 wherein said fuel container and delivery assembly comprises;

(A) an exterior housing containing a fuel solution, said housing having an exit port through which fuel is transported out of the cartridge; and

(B) a fuel delivery component, comprised substantially of a material which is substantially saturated with fuel for delivery to said fuel cell as fuel is consumed by said fuel cell, said fuel delivery component having a contact point extending through said exit port in said housing.

21. (Currently Amended) The direct oxidation fuel cell system as defined in claim 20 wherein a contact point is defined at the connection between said fuel delivery component and said anodic receptor [[component]]material, and flow of fuel from said fuel delivery component to said anodic receptor [[component]]material is interrupted when said contact point is broken.

22. (Original) The direct oxidation fuel cell system as defined in claim 21 further comprising means for interrupting flow of fuel across said contact point.

23. (Currently Amended) The direct oxidation fuel cell system as defined in claim 22 wherein said means for interrupting the flow of fuel across said contact point is a pair of [[SMA]] shape memory alloy strips placed adjacent said contact point, which have a first shape that allows the contact to be made between the fuel delivery component and the anodic receptor [[component]]material to allow the flow of fuel therebetween, and a

second shape that interrupts said contact between said fuel delivery component and the anodic receptor [[component]]material.

24. (Currently Amended) The direct oxidation fuel cell system as defined in claim 23 wherein said [[SMA]]shape memory alloy strips are comprised substantially of nitinol.

25. (Currently Amended) The direct oxidation fuel cell system as defined in claim 23 further comprising a means for providing an electric current across said [[SMA]] shape memory alloy strips to cause each of said [[SMA]] shape memory alloy strips to take [[it]] a second shape, thus interrupting the flow of fuel in said system.

26. (Original) The direct oxidation fuel cell system as defined in claim 19 further comprising said fuel delivery cartridge including a mechanism at said exit port whereby flow of fuel out of said fuel cartridge is halted when said mechanism is in a closed position, and said mechanism automatically changes to said closed position when said fuel delivery cartridge is disconnected from said fuel cell.

27. (Original) The direct oxidation fuel cell system as defined in claim 26 wherein said mechanism is a duckbill valve that moved to an open position when said anode chamber of said fuel cell is connected to said fuel delivery cartridge.

28. (Original) The direct oxidation fuel cell system as defined in claim 19 further comprising a fuel cell assembly including a fuel cell stack, and at least one of said fuel cells in said stack including a wicking arm that draws fuel into that cell either from a fuel source, or from a cell which is contiguous to it in said stack.

29. (Original) The direct oxidation fuel cell system as defined in claim 28 further comprising each cell in said fuel cell stack including a wicking arm that communicates with the anode face of each cell in the stack.

30. (Original) The direct oxidation fuel cell system as defined in claim 19 further comprising refilling said fuel delivery cartridge using a methanol cartridge to substantially saturate said fuel delivery component with fuel solution.

31. (Original) The direct oxidation fuel cell system as defined in claim 19 further comprising an interface disposed between said fuel delivery cartridge and said fuel cell to provide a seal against at least one of evaporative losses and leakage losses.

32. (Currently Amended) A refillable direct oxidation fuel cell system, comprising:

(A) an exterior casing having an opening therein [[thought]] through which fuel solution may be introduced;

(B) a direct oxidation fuel cell including:

(i) a membrane electrode assembly, including:

a.) a protonically conductive, electronically non-conductive membrane electrolyte, having an anode face and an opposing cathode face; and

b.) a catalyst coating disposed on at least one of said anode face and said cathode face, whereby electricity-generating reactions occur upon introduction of fuel solution from an associated fuel source, including anodic dissociation of said fuel solution into carbon dioxide, protons and electrons, and cathodic combination of protons, electrons and oxygen from an associated source of oxygen, producing water;

(ii) an anodic fuel receptor material disposed in said anode chamber in intimate contact with [[said]] an anodic diffusion layer, said anodic fuel receptor material allowing said fuel solution to be transported from said associated fuel source in such a manner that said fuel solution travels through to said anode face as fuel is consumed at said anode;

(iii) means for collecting electric current provided in said electricity-generating reactions to provide said electric current to a load; and

(C) a fuel container and delivery assembly coupled to said direct oxidation fuel cell, said fuel container and delivery assembly including a fuel delivery component that allows fuel to be transported to said anode fuel receptor, and said fuel container and delivery assembly including a re-fueling port that communicates with said opening said casing, for refilling the fuel in said fuel container and delivery assembly.